Abstract of Quality Assurance plan (ROAD)

Name of Work :	**Improvement to Roads and Drains at MCEHS Layout 1st and 2nd phase, Sampigehalli, Chokkanahalli, Balaji Krupa Layout, Basavalingappa Nagar, Central Excise Layout , Belahalli and Kattigenhalli in Ward No 05 and Kaveri nagara and shirdi sai nagara in Ward No 06 and Surrunding area in Byatrayanapura Sub Division.**				
Estimate Cost :	**1000.00 lakhs**	**Tender Agreement no & Date:**	**EE/BTP/BBMP/E-PMT/LOA/T-10 52484/2022-23. D:14-11-2022**	**Contractor:**	A G Narayanaswamy.
As Per tender/ Date of commencement of work :		**02-12-2022**	**As Per tender /Date of completion of work:**		**02-06-2023**

Sl No	Materials required for finishined item of work	Unit	Quantity of Materials	Name of Test to be Conducted	No of Tests Required	No of test by		No of test by Competent Authority / Manufacturer	Total nos of test conducted by		Frequency as per Relevent IS Codes and MoRTH Quality Plans	Reference	Remarks
						Const Sub-Dn	QA Sub-dn		Const Sub-Dn	QA Sub-dn			
Concrete works													
1	40 mm and down size Coarse aggregate	Cum		Gradation							One Test per 100 Cum/ or Change in source	IS 383-2016, IS2386(part1 - 8)	Any change in source / visual observations, number of tests may be increased and subsequently on monthly basis
				Flakiness and Elongation index							Once at beginning for each source	IS 383-2016, IS2386(part1)-1963 &2430-1969	
				Impact value								IS 383-2016, IS2386(part IV)-1963 &2430-1969	
				Water Absorbtion								IS 383-2016, IS2386(part III)-1963 &2430-1969	
2	20 mm and 12.5 mm down size Coarse aggregate	Cum		Gradation							One Test per 100 Cum/ or Change in source	IS 383-2016, IS2386(part1)-1963 & sampling 2430-1969 ,4926-2003	Any change in source / visual observations, number of tests may be increased and subsequently on monthly basis
				Flakiness and Elongation index							Once at beginning for each source	IS 383-2016, IS2386(part1)-1963 &2430-1969	
				Impact value								IS 383-2016, IS2386(part IV)-1963 &2430-1969	
				Water Absorbtion								IS 383-2016, IS2386(part III)-1963 &2430-1969	

g		500-10 Stability Of Mix-MORTH Table 500-11	Days	Two source	548.29 Cum	2	2	

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Sl No	Materials required for finishined item of work	Unit	Quantity of Materials	Name of Test to be Conducted	No of Tests Required	No of test by		No of test by Competent Authority / Manufacturer	Total nos of test conducted by		Frequency as per Relevent IS Codes and MoRTH Quality Plans	Reference	Remarks
						Const Sub-Dn	QA Sub-dn		Const Sub-Dn	QA Sub-dn			
3	Fine aggregate	Cum		Seive analysis							One Test per 100 cum or Change in source	IS 383-2016, IS2386(part 2)-1963 &2430-1969	Any change in source / visual observations, number of tests may be increased
4	Cement	Bags		Normal Consistency Initial setting time Final setting time Compressive strength							1 test for every 5000 bags/1 test for each consignment/ as decided by the engineer incharge	IS 269, IS 455, IS 1489, IS 8112-1989 IS 12269-1987	Any change in cement grade/brand test to be carried out
5	Steel	MT	17.20	Tensile test a) Dia of bar b) weight/mtr c) Yeild stress d) Tensile test	2						One Test for Each Consignment (all dia of rods)	IS 1786-2008 & IS1608-2005	Certificate from authorised testing labs followed by Manufactures certificate.
				Bend and re- bend test	2							IS 1786-2008 & IS1599-1985	
				Chemical Analysis	2							IS 1786-2008 & IS 228 (part1-24)	
6	Super plastisizer	Ltr									One Test for Each Consignment	IS 9103-1999 &2003	Certificate from authorised testing labs followed by Manufactures certificate.

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Sl No	Materials required for finishined item of work	Unit	Quantity of Materials	Name of Test to be Conducted	No of Tests Required	No of test by		No of test by Competent Authority / Manufacturer	Total nos of test conducted by		Frequency as per Relevent IS Codes and MoRTH Quality Plans	Reference	Remarks
						Const Sub-Dn	QA Sub-dn		Const Sub-Dn	QA Sub-dn			
7	Concrete M20/25/30	Cum		Mix Design								IS 456-2000,IS4926-2003,IS 516-1959 & 1199-1959 IS 8112-1989 for 43 grade IS 12269-1987 for 53 grade	Mix design performed at the beginning of work by contractor & get approval from competent authority
				Slump Test							2 Tests per Day / as required at Site		
				7 days Compressive Strength							1-5cum - 1 set, 5-15 cum- 2 set, 15-30cum-3 set, 30-50cum - 4 set , aabove 50 cum-additio 1 set and above 100 cum - 1 set for every 100 cum . For RMC concrete 1 set for every 50cum or part/ As decided by Engineer Incharge		
				28 days Compressive Strength									
8	RMC Concrete	Cum	1098.41	Mix Design								IS 456-2000,IS4926-2003,IS 516-1959 & 1199-1959 IS 8112-1989 for 43 grade IS 12269-1987 for 53 grade	Mix design performed at the beginning of work by contractor & get approval from competent authority
				Slump Test	8						2 Tests per Day / as required at Site		
				7 days Compressive Strength	22						1-5cum - 1 set, 5-15 cum- 2 set, 15-30cum-3 set, 30-50cum - 4 set , aabove 50 cum-additio 1 set and above 100 cum - 1 set for every 100 cum . For RMC concrete 1 set for every 50cum or part/ As decided by Engineer Incharge		The RMC should be Obtained only from the Plant Certified by the Quality Council of India as per the letter no: CE(C&B) dated: 02.09.2015
				28 days Compressive Strength	22								

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Sl No	Materials required for finishined item of work	Unit	Quantity of Materials	Name of Test to be Conducted	No of Tests Required	No of test by		No of test by Competent Authority / Manufacturer	Total nos of test conducted by		Frequency as per Relevent IS Codes and MoRTH Quality Plans	Reference	Remarks
						Const Sub-Dn	QA Sub-dn		Const Sub-Dn	QA Sub-dn			
9	Embankment/ Sub grade	Cum		Grain Size Analysis							At the time of selection and change of borrow	IS 2720	As per IRC SP 57
				Atterberg Limits									
				Lab MDD & OMC									
				CBR Test								IS 2720 (part8 & part2)	
		Sqm		Field density							1 set test per 3000sqm	IS 2720 (part8)	For each & every layer
	Camber	Mtr.		Camber							1 test/ 500m		
	Shoulders	mtr		Field density							1 set test per 3000sqm	IS 2720 (part8)	
10	Granular sub base	Cum		Mix Design									Mix Design performed at the begining of work by contractor and get approval from competant authorityfor more than 1 crore work or quantity more than 100 cum
				Physical properties of Aggregates / Design Mix							One test per 400cum/1 test each source by QA	IS 383-2016, IS2386(part1)-1963 & sampling 2430-1969 ,4926-2003	
				Lab MDD & OMC									
				Gradation							One test /400Cum		
		Sqm		Field Density							One test /1000Sqm		
		Mtr.		Camber							1 test/ 500m		

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Sl No	Materials required for finishined item of work	Unit	Quantity of Materials	Name of Test to be Conducted	No of Tests Required	No of test by		No of test by Competent Authority / Manufacturer	Total nos of test conducted by		Frequency as per Relevent IS Codes and MoRTH Quality Plans	Reference	Remarks
						Const Sub-Dn	QA Sub-dn		Const Sub-Dn	QA Sub-dn			
11	Wet mix macadam	Cum	8248.18	Mix Design									Mix Design performed at the begining of work by contractor and get approval from competant authority for more than 1 crore work or quantity more than 100 cum
			8248.18	Aggregate impact value	8						1 test per 1000cum/One test each source by QA	IS 383-2016, IS2386(part1)-1963 & sampling 2430-1969 ,4926-2003	Mix design performed at the beginning of work by contractor & get approved from competent authority
			8248.18	Combined flakiness & elongation indicess	16						1 test per 500cum/One test each source by QA		
			8248.18	Lab MDD & OMC	41						1 test per 200cum/One test each source by QA		
			8248.18	Gradation	41						One test /200Cum		
		Mtr.		Camber	10 Set						1 test/ 500m		
		Sqm	35753.73	Field Density	35 Set						One set of 3 test /1000Sqm		
	Road works bitumenous												
12	Primer coat	Tonne	32.18	Quality of binder	3						Each lot / one test per 10Mtonnes	IS 73-2013 and IS 8887	Certificate from authorised testing labs followed by Manufactures certificate.
		Sqm	35753.73	Rate of spread of binder	9						3 tests / day	Morth 500-6	
13	Tack coat	Tonne	5.95	Quality of binder	1						Each lot / one test per 10Mtonnes	IS 73-2013 and IS 8887	Certificate from authorised testing labs followed by Manufactures certificate.
		Sqm	29727.77	Rate of spread of binder	10						3 tests / day	Morth 500-6	

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Sl No	Materials required for finishined item of work	Unit	Quantity of Materials	Name of Test to be Conducted	No of Tests Required	No of test by		No of test by Competent Authority / Manufacturer	Total nos of test conducted by		Frequency as per Relevent IS Codes and MoRTH Quality Plans	Reference	Remarks
						Const Sub-Dn	QA Sub-dn		Const Sub-Dn	QA Sub-dn			
14	Bitumenous Macadam			Mix Design									Mix Design performed at the begining of work by contractor and get approval from competant authority for more than 1 crore work or quantity more than 100 cum
		Cum		Aggregate impact value							one test /200 cum or change in quality of aggregate	Morth section 500	Mix design performed at the beginning of work by contractor & get Verified/ approved from competent authority
				Combined flakiness & elongation							one test /350 cum or change in quality of aggregate		
				Stripping value							one test of each source / change in quality of aggregate		
				water absorption									
				Gradation							Two tests /day		
				Binder content							Two tests per day per plant/		
				Temperature							At regular intervals		
		sqm		Field Density							One test /700Sqm		
		Mtr.		Camber							1 test/ 500m	as per MORTH 900	

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Sl No	Materials required for finishined item of work	Unit	Quantity of Materials	Name of Test to be Conducted	No of Tests Required	No of test by		No of test by Competent Authority / Manufacturer	Total nos of test conducted by		Frequency as per Relevent IS Codes and MoRTH Quality Plans	Reference	Remarks
						Const Sub-Dn	QA Sub-dn		Const Sub-Dn	QA Sub-dn			
15	Semi dense Bitumenous concrete			Mix Design									Mix Design performed at the begining of work by contractor and get approval from competant authority for more than 1 crore work or quantity more than 100 cum
		Cum		Aggregate impact value							one test /50 cum or change in quality of aggregate	Morth section 500	
				Combined flakiness & elongation							one test /50 cum or change in quality of aggregate		
				water absorption							one test of each source / change in quality of aggregate		
				Mix Grading							1 set of test of 400T of mix subject to 2 test per day per plant		
				Binder content							1 set of test of 400T of mix subject to 2 test per day per plant		
				Temperature							at regular intervals		
		sqm		Field Density							One test /700Sqm		
		Mtr.		Camber							1 test/ 500m	as per MORTH 900	

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Sl No	Materials required for finishined item of work	Unit	Quantity of Materials	Name of Test to be Conducted	No of Tests Required	No of test by		No of test by Competent Authority / Manufacturer	Total nos of test conducted by		Frequency as per Relevent IS Codes and MoRTH Quality Plans	Reference	Remarks
						Const Sub-Dn	QA Sub-dn		Const Sub-Dn	QA Sub-dn			
			1213.11	Mix Design									Mix Design performed at the begining of work by contractor and get approval from competant authority for more than 1 crore work or quantity more than 100 cum
16	Dense Bitumenous Macadum	Cum	1213.11	Aggregate impact value	4						one test /350 cum or change in quality of aggregate	Morth section 500	
			1213.11	Combined flakiness & elongation	4						one test /350 cum or change in quality of aggregate		
			1213.11	water absorption	4						one test of each source / change in quality of aggregate		
			1213.11	Mix Grading	4						1 set of test of 400T of mix subject to 2 test per day per plant		
			1213.11	Binder content	4						1 set of test of 400T of mix subject to 2 test per day per plant		
			1213.11	Temperature	50 Set						at regular intervals		
		sqm	24262.20	Field Density	35						One test /700Sqm		
		Mtr.	0.00	Camber	12 Set						1 test/500m	as per MORTH 900	
		Sqm	24262.20	Rate of spread of Mix Material	8 Set						after every 5th truck load		

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Sl. No	Materials required for finishined item of work	Unit	Quantity of Materials	Name of Test to be Conducted	No of Tests Required	No of test by		No of test by Competent Authority / Manufacturer	Total nos of test conducted by		Frequency as per Relevent IS Codes and MoRTH Quality Plans	Reference	Remarks
						Const Sub-Dn	QA Sub-dn		Const Sub-Dn	QA Sub-dn			
17	Bitumenous Concrete	Cum	1646.06	Mix Design								Morth section 500	Mix Design performed at the begining of work by contractor and get approval from competant authority for more than 1 crore work or quantity more than 100 cum
			1646.06	Aggregate impact value	5						one test /350 cum or change in quality of aggregate		Mix design performed at the beginning of work by contractor & get Verified/ approved from competent authority
			1646.06	Combined flakiness & elongation	5						one test /350 cum or change in quality of aggregate		
			1646.06	water absorption	5						one test of each source / change in quality of aggregate		
			1646.06	Mix Grading	4						1 set of test of 400T of mix subject to 2 test per day per plant		
			1646.06	Binder content	4						1 set of test of 400T of mix subject to 2 test per day per plant		
			1646.06	Temperature	50 Set						at regular intervals		
		sqm	41151.50	Field Density	40						One test /700Sqm		
		Mtr.	0.00	Camber	12 Set						1 test/ 500m	as per MORTH 900	
		sqm	41151.50	Rate of spread of Mix Material	16 Set						after every 5th truck load		

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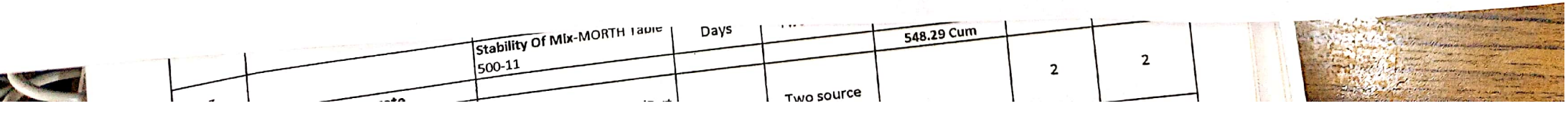

Sl No	Materials required for finishined item of work	Unit	Quantity of Materials	Name of Test to be Conducted	No of Tests Required	No of test by		No of test by Competent Authority / Manufacturer	Total nos of test conducted by		Frequency as per Relevent IS Codes and MoRTH Quality Plans	Reference	Remarks
						Const Sub-Dn	QA Sub-dn		Const Sub-Dn	QA Sub-dn			
18	Bitumen	Tonne		Softening point							Test in beginning by QA or change in source	IS 73-2013 and IS 8887	
				Flash Point									
				Fire point									
				Penetration									
				Ductility									
Road Furnitures(Traffic Signs, Markings & other Road Appurtances)													
19	Road Markings			width of marking							at regular intervals	IRC-67 MORTH	
				free flow test									Manufactures certificate.
				Gradation/Reflective index/roundness							Certicate as per specification	IRC-67 MORTH	
				General requirements							warranty and durability certificate	MORTH spec	

Note:

1 For Water Suppy, Sanitory, Electrical and other Items nessasary certificate indicating the quality as per the prescribed IS shall be obtained by the Authorised/Manufactures shall be obtained during the execution of the Work.

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

Assitant Engineer
(Ward No) 02

Asiistant Executive Engineer
(Sub Division)

ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-26

Executive Engineer
(_____ Divison)

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QUALITY CONTROLE ABSTRACT (AS PER MORTH -V REVISION)

Name of Work : Improvements to Roads and Drains at MCEHS Layout 1st and 2nd Phase, Sampigehalli, Chokkanahalli, Balaji Krupa Layout, Basavalingappa Nagara, Central Excise Layout, Bellahalli and Kattigenahalli in Ward no 05 and Kaveri Nagara and Shiridi Sai Nagara in Ward no 6 and Surrounding areas in Byatarayanapura Division. ((Package No.01 (Consist of 5 Works)).

NAME OF AGENCY: M/s A G Narayanaswamy & Co., Prop.Sri A G Narayanaswamy,

BILL:2nd & Final Bill

SL NO	DESCRIPTION OF ITEMS	TEST	TEST UNITS	TEST PER QTY	UPTO DATE QTY	NO.OF SAMPLE CONDUCT FOR TEST	NO.OF SAMPLE CONDUCT FOR TEST
	For Asphalt Work						
1	Wet Mix Macadam				2838.42 Cum		
a		Aggregate Impact Value-IS 2720 (Part-4)- 1985 RA 2015, MORTH Table 400-13	Days	Three source		3	3
b		Gradation- IS 2720 (Part-4)- 1985 RA 2015, MORTH Table 400-13	Days	Four source		4	4
c		ATTERBERG LIMITS-IS:2720 (part 5)-1985 RA 2015, MORTH Table 400-13	Days	Four source		4	4
d		Shape test-IS:2386(part 1)-1963 RA 2016, MORTH Table 400-12	Days	Three source		3	3
2	Dense Bituminous Macadam				280.76 Cum		
a		Bitumen Content-IS 2720 (Part-4)- 1985 RA 2015, AASHTO T 164 & AASHTO T 30 & MORTH	Days	Two source		2	2
b		Gradation -IS 2720 (Part-4)- 1985 RA 2016, MORTH Table 500-10	Days	Two source		2	2
c		Impact Value -IS 2386 (Part-4)- 1963 RA 2016, MORTH table 500-10	Days	Two source		2	2
d		Quality of Binder -IS 73 -2013	Days	Two source		2	2
e		Shape test- IS:2386(part 1)- 1963 RA 2016, MORTH Table 400-13	Days	Two source		2	2
f		Specific Gravity & Water Absorption -IS 2386 (Part-4)- 1963 RA 2016, MORTH Table 500-10	Days	Two source		2	2
g		Stability Of Mix-MORTH Table 500-11	Days	Two source		2	2
3	Bituminous Concrete				548.29 Cum		
a		Bitumen Content-IS 2720 (Part-4)- 1985 RA 2015, AASHTO T 164 & AASHTO T 30 & MORTH	Days	Two source		2	2
b		Gradation -IS 2720 (Part-4)- 1985 RA 2020, MORTH Table 500-17	Days	Two source		2	2
c		Impact Value -IS 2386 (Part-4)- 1963 RA 2020, MORTH Table 500-17	Days	Two source		2	2

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d		Quality of Binder -IS 73 -2013	Days	Two source		2	2
e		Shape test- IS:2386(part 1)-1963 RA 2016, MORTH Table 500-17	Days	Two source		2	2
f		Specific Gravity & Water Absorption - IS 2386 (Part-4)-1963 RA 2016, MORTH Table 500-17	Days	Two source		2	2
g		Stability Of Mix-MORTH Table 500-17	Days	Two source		2	2
	For Civil Work						
1	Coarse Aggregate (20mm)						
a		Sieve Analysis-IS 2386 (Part-1)-1963 RA 2016	Days	One source		1	1
2	Coarse Aggregate (40mm)						
a		Sieve Analysis- IS 2386 (Part-1)-1963 RA 2016	Days	One source		1	1
3	Cement						
a		Consistancy-IS-4031 (Part -1, 3, 4, 5 & 6) 1988 (RA-2014)	Days	One source		1	1
b		Initial Setting Time-IS-4031 (Part -1, 3, 4, 5 & 6) 1988 (RA-2014)	Days	One source		1	1
c		Final Setting Time-IS-4031 (Part -1, 3, 4, 5 & 6) 1988 (RA-2014)	Days	One source		1	1
d		Soundness by Le - Chatelier's Method-IS-4031 (Part -1, 3, 4, 5 & 6) 1988 (RA-2014)	Days	One source		1	1
e		Fineness by Dry Sieving Method-IS-4031 (Part -1, 3, 4, 5 & 6) 1988 (RA-2014)	Days	One source		1	1
4	Fine Aggregate						
a		Sieve Analysis- IS 2386 (Part-1)-1963 RA 2016	Days	One source		1	1
5	Steel				0.74 MT		
a		Test on Steel- IS- 1786 :2008 IS 1608:2005, IS 1599:1985 (RA-2018)	Days	One source		1	1
6	Concrete (M20)				12.25 Cum		
a		Compaction Test- IS 516 - 1959 RA 2018	Days	One source		1	1

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ಜಿಲ್ಲಾಪಂಚಾಯತ್‌ರಾಜ್ ಉಪ ವಿಭಾಗ
ದ.ವಿ.ಪ.ಕ., ದಂಗೆಪುರ-56

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QUALITY CONTROLE ABSTRACT (AS PER MORTH -V REVISION)

Name of Work : Improvements to Roads and Drains at MCEHS Layout 1st and 2nd Phase, Sampigehalli, Chokkanahalli, Balaji Krupa Layout, Basavalingappa Nagara, Central Excise Layout, Bellahalli and Kattigenahalli in Ward no 05 and Kaveri Nagara and Shiridi Sai Nagara in Ward no 6 and Surrounding areas in Byatarayanapura Division. ((Package No.01 (Consist of 5 Works)).

NAME OF AGENCY: M/s A G Narayanaswamy & Co., Prop.Sri A G Narayanaswamy,

BILL:1st & Part Bill

SL NO	DESCRIPTION OF ITEMS	TEST	TEST UNITS	TEST PER QTY	UPTO DATE QTY	NO.OF SAMPLE CONDUCT FOR TEST	NO.OF SAMPLE CONDUCT FOR TEST
	For Asphalt Work						
1	Wet Mix Macadam				5409.76 Cum		
a		Aggregate Impact Value-IS 2720 (Part-4)- 1985 RA 2015, MORTH Table 400-13	Days	Six source		6	6
b		Gradation- IS 2720 (Part-4)- 1985 RA 2015, MORTH Table 400-13	Days	Twenty Seven source		27	27
c		ATTERBERG LIMITS-IS:2720 (part 5)-1985 RA 2015, MORTH Table 400-13	Days	Twenty Seven source		27	27
d		Shape test-IS:2386(part 1)-1963 RA 2016, MORTH Table 400-12	Days	Six source		6	6
2	Dense Bituminous Macadam				932.35 Cum		
a		Bitumen Content-IS 2720 (Part-4)- 1985 RA 2015, AASHTO T 164 & AASHTO T 30 & MORTH	Days	Three source		3	3
b		Gradation -IS 2720 (Part-4)- 1985 RA 2016, MORTH Table 500-10	Days	Three source		3	3
c		Impact Value -IS 2386 (Part-4)- 1963 RA 2016, MORTH table 500-10	Days	Three source		3	3
d		Quality of Binder -IS 73 -2013	Days	Three source		3	3
e		Shape test- IS:2386(part 1)-1963 RA 2016, MORTH Table 400-13	Days	Three source		3	3
f		Specific Gravity & Water Absorption -IS 2386 (Part-4)- 1963 RA 2016, MORTH Table 500-10	Days	Three source		3	3
g		Stability Of Mix-MORTH Table 500-11	Days	Three source		3	3
3	Bituminous Concrete				1097.77 Cum		
a		Bitumen Content-IS 2720 (Part-4)- 1985 RA 2015, AASHTO T 164 & AASHTO T 30 & MORTH	Days	Three source		3	3

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b		Gradation -IS 2720 (Part-4)-1985 RA 2020, MORTH Table 500-17	Days	Three source		3	3
c		Impact Value -IS 2386 (Part-4)-1963 RA 2020, MORTH Table 500-17	Days	Three source		3	3
d		Quality of Binder -IS 73 -2013	Days	Three source		3	3
e		Shape test- IS:2386(part 1)-1963 RA 2016, MORTH Table 500-17	Days	Three source		3	3
f		Specific Gravity & Water Absorption - IS 2386 (Part-4)-1963 RA 2016, MORTH Table 500-17	Days	Three source		3	3
g		Stability Of Mix-MORTH Table 500-17	Days	Three source		3	3
	For Civil Work						
1	Coarse Aggregate (20mm)						
a		Sieve Analysis-IS 2386 (Part-1)-1963 RA 2016	Days	One source		1	1
2	Coarse Aggregate (40mm)						
a		Sieve Analysis- IS 2386 (Part-1)-1963 RA 2016	Days	One source		1	1
3	Cement						
a		Consistancy-IS-4031 (Part -1, 3, 4, 5 & 6) 1988 (RA-2014)	Days	One source		1	1
b		Initial Setting Time-IS-4031 (Part -1, 3, 4, 5 & 6) 1988 (RA-2014)	Days	One source		1	1
c		Final Setting Time-IS-4031 (Part -1, 3, 4, 5 & 6) 1988 (RA-2014)	Days	One source		1	1
d		Soundness by Le - Chatelier's Method-IS-4031 (Part -1, 3, 4, 5 & 6) 1988 (RA-2014)	Days	One source		1	1
e		Fineness by Dry Sieving Method-IS-4031 (Part -1, 3, 4, 5 & 6) 1988 (RA-2014)	Days	One source		1	1
4	Fine Aggregate						
a		Sieve Analysis- IS 2386 (Part-1)-1963 RA 2016	Days	One source		1	1
5	Steel				16.46 MT		
a		Test on Steel- IS- 1786 :2008 IS 1608:2005, IS 1599:1985 (RA-2018)	Days	Two source		2	2
6	Concrete (M20)				252.35 Cum		
a		Compaction Test- IS 516 - 1959 RA 2018	Days	Six source		6	6
7	Concrete (M30)				870.09 Cum		
		Compaction Test- IS 516 - 1959 RA 2018	Days	Seventeen source		17	17

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